

CLAIMS

1. A compression system for compressing a bitonal image, comprising:

 a scaling system for geometrically scaling the bitonal image, wherein the scaling system reduces contiguous sets of original pixels down to a smaller set of scaled pixels;

 and

 an encoding system that encodes the scaled bitonal image using an industry standard technique.
2. The compression system of claim 1, wherein the bitonal image comprises a black white image.
3. The compression system of claim 1, wherein the scaling system reduces a pair of pixels down to a single scaled pixel based on four pixel values, wherein the four pixel values include the two values of the pair of pixels and two values of two pixels that flank the pair of pixels.
4. The compression system of claim 3, wherein scaling system utilizes a look-up table to determine the single scaled pixel value based on the four pixel values.
5. The compression system of claim 4, wherein the look-up table is optimized to preserve transition and isolated attributes, and substantially maintain relative geographic position of the attributes.

6. The compression system of claim 1, wherein the industry standard technique comprises a CCITT-G4 format.

7. A method for compressing a bitonal image, comprising:
- geometrically scaling the bitonal image; and
 - encoding the scaled bitonal image using an industry standard technique.
8. The method of claim 7, wherein the step of geometrically scaling the bitonal image comprises:
- selecting a pair of pixels from the original bitonal image;
 - forming a four digit binary value made up of values from the pair of pixels and two flanking pixels;
 - calculating a single binary pixel value from the four digit binary value; and
 - replacing the pair of pixels with the single binary pixel value.
9. The method of claim 8, comprising the further steps of:
- selecting a second pair of pixels that are contiguous to the first pair of pixels; and
 - repeating the forming, calculating and replacing steps for the second pair.
10. The method of claim 8, wherein the calculating step is performed with a table look-up.
11. The method of claim 8, wherein the look-up table has 16, four digit binary input values ranging from 0000 - 1111, and wherein each of the 16 input values equates to a single digit binary output value.

12. The method of claim 7, wherein the bitonal image comprises a black white image.

13. The method of claim 7, wherein the scaling step is optimized to preserve transition and isolated attributes, and substantially maintain relative geographic position of the attributes.

14. The method of claim 7, wherein the predefined protocol comprises CCITT-G4.

15. A program product stored on a recordable medium for processing a bitonal image, comprising a scaling system having:

means for selecting a pair of pixels from the original bitonal image;

means for forming a four digit binary value made up of values from the pair of pixels and two flanking pixels;

means for calculating a single binary pixel value from the four digit binary value;

and

means for generating a scaled bitonal image in which the pair of pixels are replaced with the single binary pixel value.

16. The program product of claim 15, further comprising an encoding system for encoding the scaled bitonal image using CCITT-G4.

17. The program product of claim 15, wherein the bitonal image is a black white image.

18. The program product of claim 15, wherein the calculating means comprises a look-up table.

19. The program product of claim 18, wherein the look-up table has 16, four digit binary input values ranging from 0000 - 1111, and wherein each of the 16 input values equates to a single digit binary output value.

20. The program product of claim 15, wherein the scaling system is optimized to preserve transition and isolated attributes in the bitonal image, and substantially maintain relative geographic position of the attributes.